**Operating System**

**(4ITRC2)**

**IT IV Semester**

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**Part 1: Outputs of Commands**

**1. pwd**

The pwd command displays the present working directory.

$ pwd

/home/user

**2. cd**

The cd command is used to change directories.

$ cd Documents/

$ pwd

/home/user/Documents

**3. ls**

The ls command lists the files and directories in the current directory.

$ ls

file1.txt file2.txt Documents Downloads

**4. mkdir**

The mkdir command is used to create a new directory.

$ mkdir NewFolder

$ ls

NewFolder file1.txt file2.txt

**5. rm**

The rm command is used to remove a file.

$ rm file1.txt

$ ls

file2.txt NewFolder

**6. touch**

The touch command creates a new empty file.

$ touch newfile.txt

$ ls

newfile.txt file2.txt NewFolder

**7. hostname**

The hostname command displays the system’s hostname.

$ hostname

my-laptop

**8. cat**

The cat command is used to view the contents of a file.

$ cat newfile.txt

Hello, this is a test file.

**9. chmod**

The chmod command changes file permissions.

$ chmod 777 newfile.txt

**10. echo**

The echo command prints a message to the terminal.

$ echo "Hello, World!"

Hello, World!

**11. grep**

The grep command searches for a pattern in a file.

$ grep "Hello" newfile.txt

Hello, this is a test file.

**12. fgrep**

The fgrep command searches for a fixed string in a file.

$ fgrep "Hello" newfile.txt

Hello, this is a test file.

**13. mv**

The mv command moves or renames a file.

$ mv newfile.txt oldfile.txt

$ ls

oldfile.txt

**14. cp**

The cp command copies a file.

$ cp oldfile.txt copyfile.txt

$ ls

oldfile.txt copyfile.txt

**15. more**

The more command displays file content page by page.

$ more largefile.txt

**16. less**

The less command is similar to more, allowing backward navigation.

$ less largefile.txt

**17. wc**

The wc command counts words, lines, and characters in a file.

$ wc oldfile.txt

5 10 50 oldfile.txt

**18. awk**

The awk command is used for pattern scanning and processing.

$ awk '{print $1}' oldfile.txt

**19. sed**

The sed command is used for stream editing.

$ sed 's/Hello/Hi/' oldfile.txt

**20. tail**

The tail command shows the last lines of a file.

$ tail -n 5 oldfile.txt

**Part 2: Answering Questions with Commands**

1. **Navigate to a Specific Directory**:

cd /path/to/directory

1. **See detailed information about files and directories using ls**:

ls -l

1. **Create multiple directories using mkdir**:

mkdir dir1 dir2 dir3

1. **Remove multiple files at once**:

rm file1.txt file2.txt file3.txt

1. **Delete directories using rm**:

rm -r directory\_name

1. **Copy files and directories**:

cp file1.txt /destination/path/

cp -r directory\_name /destination/path/

1. **Rename a file using mv**:

mv oldname.txt newname.txt

1. **Move multiple files using mv**:

mv file1.txt file2.txt /destination/path/

1. **Create multiple empty files using touch**:

touch file1 file2 file3

1. **View content of multiple files**:

cat file1.txt file2.txt

1. **Create a file and add content using cat**:

cat > newfile.txt

Hello, this is new content.

(Ctrl+D to save)

1. **Append contents of one file to another**:

cat file1.txt >> file2.txt

1. **View large files with cat and paging**:

cat largefile.txt | less

1. **Merge multiple files using cat**:

cat file1.txt file2.txt > merged.txt

1. **Append to an existing file using cat**:

Cat >> existingfile.txt

Additional content here.

(Ctrl+D to save)

1. **Explanation of chmod commands**:
   * chmod 777 – Gives full permissions (read, write, execute to all users).
   * chmod 755 – Owner has full permissions, others have read and execute.
   * chmod +x – Adds execute permission to a file.
2. **Find the number of lines matching a pattern**:

grep -c "pattern" filename.txt

1. **Display files containing a specific string**:

grep -l "pattern" \*.txt

1. **Show line numbers of matched lines**:

grep -n "pattern" filename.txt

1. **Match lines starting with a string**:

grep "^pattern" filename.txt

1. **Sort files in descending order**:

sort -r filename.txt

1. **Sort a file based on a specific column**:

sort -k 2 filename.txt